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J. F. SACHSE, Associate Editor.

THE CAMERA THE HISTORIAN OF THE FUTURE.

AMONG the manifold uses of the camera and photography in the various departments of the sciences and arts at the present day, both as a profession and pastime, no field opens wider nor shows greater possibilities than that of photo-historiography. With the great improvements which have lately been made in portable apparatus, and the simplification of the various manipulations and formulæ, together with the perfection of permanent processes, photography is destined soon to take its place, we may well say, as the historian of the future. The camera, with its great recording eye, will not alone pictorially depict the passing events of the day, but retain the appearance of the fast crumbling landmarks and monuments of the past; it will duplicate the features of the present generation, as well as permanently renew the old fading portraits and yellowing parchments, thus preserving them for the students and searchers of the future. That such photographic records will before long become the one thing needful in connection with every country, society, or other body having any interest in its history being handed down to posterity, will be apparent to all.

This fact is being recognized in different parts of the world. We already read of photographic surveys of various localities, castles, and historic buildings in England; of the "Ausflüge" of the photographic societies in Germany; the efforts made to reproduce old paintings, documents, and engravings in Vienna. The glorious photographic detail survey of the Basilica of Saint Mark, at Venice, in Italy, consisting of six hundred and fifty plates in five large portfolios, executed under the patronage of H. R. H. Margaret of Savoy, Queen of Italy, the work having been commenced in 1878 and completed in 1885, by Ferdnando Ongania, and a numerous corps of assistants. The majority of these plates are reproduced by the heliotype process—others in colors, by cromo lithography. How thoroughly the work was done may be surmised from the fact that the entire facade was divided into twenty-one sections. Yet so exact is the work that the plates fit together exactly, forming one large picture, 8 ft. 9 in. long by 5 ft. 9 in. high. This valuable collection of plates shows completely all the decorative features of both the interior and exterior of the grand ecclesiastical edifice. Every detail being taken directly from the actual object by the camera, and reproduced by the phototype process in printer's ink, this

collection, besides serving as a basis for any renewal or restoration that may be necessary in the course of time, will transmit to students in all parts of the world, as well as to posterity, a faithful record of the splendid ecclesiastical monument in the state of preservation in which it is found at the present time.

A somewhat similar work has been done on the Alhambra, in Spain; while from far-off Australia comes the news that some hundreds of photographs have been collected of the leading men who assisted to lay the foundation of Victoria, and which had been reproduced in a uniform size, thus forming an interesting volume which in time will prove one of the most valuable historical records of the colony. In our own country this subject has not received the attention which it deserves; it is true a few individual efforts may have been made in different parts of the country, but in most all cases without any definite system, or without any intention to thoroughly exhaust the territory. A work of this kind, to be of future historic value, must be done conscientiously and intelligently, as well as in a systematic manner, and those who undertake the task should be thoroughly posted, not alone in the general and local history of the territory and subjects at which they wish to point their camera, but also train their eye for the salient and important parts, to say nothing about the picturesque bits of the subject, no matter how unpromising it may appear from an artistic standpoint at first sight.

In a work of this kind, negatives are apt to increase in number rapidly, and at the very outset, after the survey is completed, a new difficulty presents itself, viz., how best to utilize the prints to the best advantage for future use and availability; and it is here where we must look to the expert book-binder, as well as the photographer or silver printer. As is well known, the regular albumen prints are so apt to twist or warp so as to make them almost useless for book-work. Turning to the new "permanent" processes, where the plates could be printed on heavy plain paper, masked so as to show a wide margin, same as an etching or steel engraving, all difficulties were thought to have been overcome. This was notably the case with the platinum process, but here again a difficulty presented itself from the fact of the prints having to be developed in hot chemicals, the paper loses its sizing, opens the fibers, and becomes tender, and the white margin soon turns yellow. The same may be said of some of the bromide papers. Phototypes would seem to present the best results for our purpose, but as at present produced, and on account of the small editions, would be out of question on account of the expense involved. The welcome news, however, comes to us from Vienna and Paris that the process of producing these reproductions has been much simplified. In Paris, amateur outfits for "phototypie" are already offered for sale. If this process is practicable and cheap it may solve the problem, especially as there can be no question as to the permanency of printer's ink.

The first complete copy of a photographic survey which has been made in this country, so far as has come to the knowledge of the writer, was shown a short time ago at the rooms of the Historical Society of Pennsylvania. The subject was the old religious community at Ephrata, and consisted of fifty silver-prints, 4x5, mounted on heavy cards 7x10, a print being mounted on each side of the mount. They were burnished by a peculiar process, so as to overcome as much as possible the twist of the cards. These pictures reproduced all the different buildings still standing

which had formerly been used by the community; the various interiors were also portrayed, together with the mystical inscription upon the walls; then came the various detail of the construction, such as unique portals and quaint staircases; then followed some specimens of their peculiar musical MSS., so highly valued by all bibliophiles, the series concluding with the mossy and crumbling tombstones which mark the resting place of these old religious pioneers, who unto death upheld their Sabbatarian doctrine. Between each two cards a page of heavy bond paper was inserted, upon which was engrossed a short sketch or description of the picture on the page opposite. A title page and full index preceded the illustrations. The mounts were hinged at the back, and the whole was bound in a rich morocco cover. The volume formed a unique book which may well be classed as an "edition de luxe," irrespective of its great historical value. As a matter of course, the limited demand for any such a work would debar the average professional from undertaking the photographic part. The same reasons apply to the printing of the descriptive pages or inserts.

In the meantime, until the difficulties which so far present themselves shall be overcome, we would suggest that wherever a photographic society or historical association exists, work of this kind should be encouraged, and some provision be made for preserving such negatives as may be given them, or means taken at least to obtain a print from any such negatives of value. These prints, when properly mounted, classified, and indexed, must prove of great value and interest in the near future.

JULIUS F. SACHSE.

SUCCESS IN PORTRAITS.

I AM going to offer a few more remarks upon the portrait branch of photography, and I will ask all experienced workers to give what I have to say the go by, recollecting that while what is here told may be familiar enough to them, there are a great many enthusiastic ladies and gentlemen providing themselves with cameras every day, and scanning photographic literature for helps, to whom assistance will, I am sure, not come amiss.

There are a few broad principles underlying success in the taking of portraits, which if properly understood at the outset lead rapidly to success, and without a knowledge of which, the aspirant will inevitably waste his time and materials, and find himself disposed to set aside in disgust, an occupation which ought to prove with proper guidance an endless source of interest and pleasure to himself and his friends.

First let us call attention to the importance of simplicity in our arrangements and effects. In mechanics it is well understood that simple contrivances are generally better than more complicated ones, but the mistaken impression seems now to prevail in relation to artistic productions, that the more complex and over-crowded they are, the higher they must stand in the scale of excellence.

The mind should be impressed, not distracted, and a work of art to be impressive, must tell its story simply and directly. Its objects should be suitably grasped, and its light and shadow collected into broad masses. All that we admit, as we pro-

ceed, to give fulness and interest to our subject must yet remain subservient to the larger and simpler parts, and it must be constantly remembered that the more we introduce by way of embellishment the more we are likely to drive away the attention and destroy the breadth and unity of purpose in our picture. When we set out to make a portrait, we must bear in mind that the head and bust of the individual are the aim and end of our work. Anything else that is introduced must not only be entirely subservient to this main end but should be as far as possible in harmony with it.

It is very difficult to secure about residences and homes generally the breadth of lighting and repose of background that are necessary to the production of a good portrait, and it is for this very reason that I am particularly induced to urge the necessity of bestowing a little time and pains upon a few necessary arrangements before attempting to expose plates upon heads.

First as to the matter of lighting, good portraits can never be made in any situation where the lighting does not extend above the level of the head, because all under shadows are destroyed, and the important modeling which gives expression is lost. For the same reason out-door pictures taken in a diffused light are seldom good, and we may here add that under the latter condition it is impossible to secure a calm tranquil expression, owing to the effect of the glare of light upon the eyes. Whether the work be attempted in an apartment or out-of-doors, the conditions should in a general way be the same, namely the direct light should come upon the sitter as nearly as possible at an angle of forty-five degrees, and somewhat from the front. It matters little whether the amount of light be great or small. It may be merely what may proceed from a little window near the top of an apartment with a high ceiling, or the whole of an out-door light which happens to be cut off eight or ten feet from the ground and sheltered still higher on two sides. It will be seen that the former condition is absolutely unattainable in an apartment with a low ceiling, while the latter may readily be got in the city in back yards where there are high walls and high board fences with big spaces of overhead light, and in the country where walls and shrubbery very often gives us virtually the same conditions.

Heads taken under porches can never make good pictures, because all the overhead light is cut off, and if the sun happens to be shining upon the floor of the porch or light earth in front of it, we have a lighting precisely analagous to that produced by the stage footlights upon the players, which is abominable to artists.

After lighting, the next most important matter is to see that we secure a quiet background. The beginner in portraiture is apt to be so absorbed in his sitter that he rarely thinks of what may happen to be back of the latter, and if there should be a combination of strongly defined objects near enough to be in focus, the head is lost in them, and the picture is spoiled. It so rarely happens that we find a quiet space in front of which to pose a sitter, that it is much better to provide ourselves with a suitable piece of quiet gray drapery, or to stretch some muslin on a slight frame a couple of yards square, and tint it with a coating of distemper, and this gives us the additional advantage of being able to grade our background from a light tint on one side, or corner rather, to a darker at the other, which not only varies it and prevents monotony, but will enable us to relieve the light side of our head of a dark ground, and *vice versa*.

The matter of posing the sitter must be governed chiefly by the character of the individual and the tact of the operator. Bolt upright stiffness should be avoided on the one hand and lolling on the other. Too much action rarely does well. It gives an appearance of affectation. Direct front views seldom make agreeable pictures. The head turned slightly around either way from the camera is the best—and the camera should, in a general way, be about on a level with the head of the individual being taken, if any difference, rather below than above. It gives more look of dignity to a face to look up to it, than to be looking down upon it. Too low a point of view diminishes the forehead and exaggerates the lower part of the face.

Light and shadow is the soul of art, and as photography expresses form by light and shadow only, the sooner the photographer makes himself acquainted with its mysteries and beauties the better. As I can some-

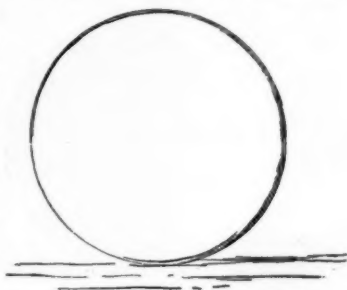


FIG. 1.

times illustrate better what is meant by a few rude scratches with the pen than I can by words, I will take these means of making my meaning more clearly understood.

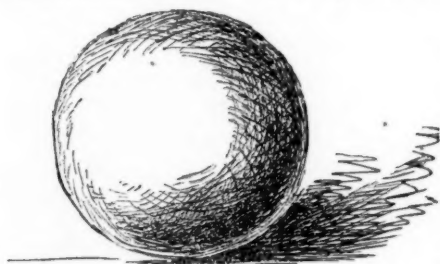


FIG. 2.

When we draw a circle, as in Fig. 1, we merely lower a space enclosed by a line. Nothing more. But when we introduce light and shadow, as in Fig. 2, we have a clear representation of a sphere. And, if we go still

further, and by calling art to our aid, we cast a shadow from the sphere, and vary our background; as in Fig. 3, we have a picture in a very simple stage. Now, trifling as this seems, it is yet vitally essential to our purpose, because in dealing with a head we are simply dealing with a sphere—and at this point I must call attention to a fact of vital importance; namely, that lights give the impression of advancing upon the eye, while shadows recede. If this fact were better understood, there would be more good portrait work done. In Figs. 4 and 5, I have shaded the sphere in such a manner as to demonstrate the capability of light and shadow to give an appearance of flatness and a sort of concavity. It will be seen from these hints how we may make a head and face appear round and full and well-developed, or flat and mean and hard.

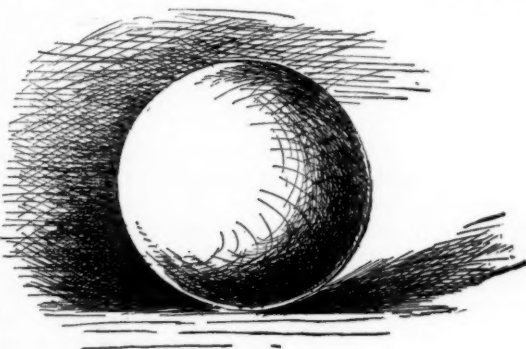


FIG. 3.

Such a lighting as that exemplified in Fig. 5 is one often seen in bad photographic portraits. The deepest shadow on the dark side is destroyed by the injudicious use of a reflector, and we have the greatest dark next to highest light, without any intervening half light, which produces a harshness that is very objectionable.

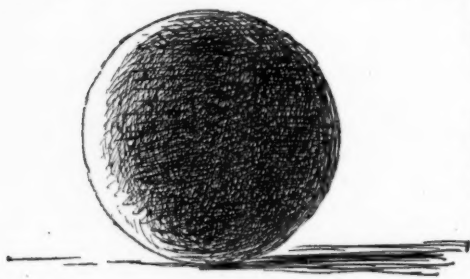


FIG. 4.

people generally too often looking upon the shadows under the projection of the eyebrows, nose and chin as mere blemishes which should be removed. Many amusing anecdotes might be cited in connection with this misconception of artists' work, one of which comes to mind which I think has not been written. A gentleman was being shown a fine portrait by Sully. After looking at it for some time in a puzzled way, he put his finger on the nose, and looking inquiringly at the painter said, "Is this a toad in a hole—a toad in a hole?"

The popular portrait painters, when that art was in its flourishing days, which was before the invention of photography, were not those who painted the best artistic heads. Then, as it is now, in the successful prosecution of the later art, the demands of the masses had to be catered to, vigorous light and shade had as far as possible to be dispensed with, all wrinkles and marks of character and truth omitted, and a slicked-up, polished surface obtained, which brought all to a commonplace mediocrity. I will say here, too, that it is a great pity that the present vulgar rage for novelty demands a setting aside of that which has been proven to be excellent, and puts in contempt certain excellencies which are based upon good natural laws and which it is not possible to supplant by others that are better, often, unfortunately, not nearly so good. Posing heads so that the entire face is in shadow, or in half shadow, and relieving off a white background, or lighting the face sharply or harshly on one edge, or having a glare of diffused light over the face, are mere tricks, and however much they may captivate on the instant, they will never wear well. Such work will inevitably after a time be cast aside.

Let us exhort beginners to bestow all the pains they can upon their work. Let them think it worth while to make a few essential preparations about lighting and backgrounds, and then if they will study the works of good portrait painters, nothing could be better than engravings of the portraits by Vandyke, Reynolds, Reaburn, and many others, they will at once be on the road to success in the art of making good photographic heads.

XANTHUS SMITH.

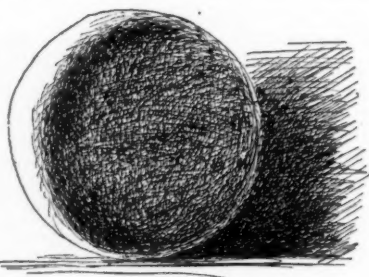


FIG. 5.

PHOTOGRAPHY AND BUSINESS.

IT is a very pleasing and encouraging thing to hear as old and experienced a member of the craft as Mr. Rockwood, of New York, say that he has been in active business for four and thirty years, and has never felt sorry at his choice of the art of photography as a calling.

In these days of plentiful, not to say superabundant, photographic literature, we find the two philosophical extremes of the optimists and the pessimists fully represented in our journals and annuals, and we regret to say that there are not wanting those whose views upon photography, particularly in its financial aspects, are directly the reverse of those expressed by Mr. Rockwood.

We are by no means disposed to take part in the discussion whether or no photography is a good means of earning a livelihood. We might as well waste time in inquiring whether it were worth while to raise cattle or vegetables as a means of making a living. We may dismiss this matter by simply saying, that having done our best to support our calling, we have found it to support us in return. If we were asked whether our business life had been free from trials, perplexities, and sometimes bitter discouragements, we should plainly answer No ! and then ask our questioner what calling he could recommend that was thus free from all vexations. We can occupy space and time to better advantage here by pausing, as it were, for a little, and looking about us at the present condition of the photographic world, particularly here in America.

The first thing we notice, and greatly do we congratulate our fellow-members of the craft upon it, is the vast increase in the number of applied uses of photography. Aside from the well-worn ruts of portrait-making under the skylight, and ordinary landscape photography, we find new fields of industry in literally every direction we turn to. Interiors—easy, pleasant and profitable work ; portraits and interiors at night, either in public or private, also pleasant and profitable, if not quite so easy. Printing, either by the old or by any of the numerous new methods, — profitable and easy. Lantern-slide making, perhaps the most fascinating branch of practical photography, and one that is increasing in importance every day in the year. General business photography, including the photographing of real estate for advertisement, of samples of goods of every possible description for commercial houses, of enormous numbers of small portraits of celebrities for increasing the ready sale of various articles like cigarettes, etc.; photography in conjunction with the microscope, and the incessant calls upon the art made by scientific students and professors of all grades. We merely mention these few of the multitudinous uses of photography, so that if any one should be a little discontented with the art as being narrowing and cramping in its tendencies, he may be set to thinking of the matter, and see that the fault lies in himself and not in photography ; and further, that if one kind of photographic business does not suit him, there are plenty of others for him to select from and pursue.

The question has frequently been raised whether the money-making side of photography was not seriously affected by amateurs and amateurism. Now we have always held to the opinion that the greater the number of amateurs, the greater the benefit to the profession. We know very well of the bitter complaints from certain

quarters, that the local amateurs take away the business from professional men. But we are glad to see that these complaints grow fewer in number and less loud every year. Besides this, there is one point that these grumblers always lose sight of—namely, that immediately upon an amateur's receiving pay for his work, he ceases to be an amateur, and enrolls himself amongst the professional members of the craft. We can indeed recall certain instances in which so-called amateurs had the effrontery to take pay for their work and print their names and addresses with the title "amateur" on their card mounts, like any regular member of the calling. This might be taken as conclusive proof of the gross ignorance both of the "amateur" and of the public he attempted to cater to, for everybody has always known, or been supposed to know, that an amateur in any science or art is one who follows it for amusement only, and receives no pay for his work. This, at least, is the conventional or commonly accepted sense of the word "amateur," but we are afraid that the more elevated as well as the more literal meaning of the word is too often overlooked entirely. Properly rendered, "amateur" means one who loves (Latin *amo*, I love), and one who thus really loves his art does not disgrace it and himself by such shabby tricks as we have referred to. If he does these mean things, and tries to call himself an amateur, he should be told that his receiving money has effectually banished him from the ranks of true amateurs, and that he is deserving of such treatment as the members of liberal callings visit upon the heads of those scab members who attempt to debase the same. The extent to which photography is indebted to the *real amateur* is a matter so well known that we need hardly mention it.

Out of the large number of amateurs now practicing photography, there are many who are already, or who may in time become, of money value to the professional man. Men of business well enough off to make frequent trips to Europe and less known portions of the earth, generally find it all that they can do to make the exposures while *en route*, and will not require much persuasion to leave the routine laborious work of printing and mounting to the professional photographer. In most cases, if lantern-slides or enlargements of any kind be required, the same plan will be pursued, and a very fair profit made. Scientific men of all sorts, physicians, astronomers, and others, are paying more and more attention to photography, but it generally amounts to their making the negatives only, and leaving the printing to the professional man, as well as the developing also sometimes. All of this of course benefits the photographer, and he would be a more than commonly stupid person who would not endeavor to extend and increase any opportunities of the kind that might offer. When we get into the "upper ten" among amateurs, we shall frequently find wealthy would-be aesthetes who prate learnedly about lighting, Rembrandt effects, "Truth in Art," etc., etc., and consider the manual labor of printing from their negatives quite beneath them. We should not at all object to receive profitable work from such people, and in many cases might look forward to regularly instructing them, after a time, in the art of how to make a negative, for let us here remark that as a general rule, the louder the art-talk of an amateur, the more detestable is his work photographically, and often artistically as well.

From our point of view then, which in photographic matters is always that of the optimist, we regard amateurs as valuable to the profession in the strictly business sense.

Efficient assistance in the working of a photographic business is a necessity, and here the question will arise how and what to teach growing lads who have entered our employ with the *bonâ fide* intention of making photography the business of their lives. For our own part, we should prefer the assistance of any ordinary steady person, after a reasonable time of instruction under ourselves, than that of a stranger appearing with highly-worded testimonials, and who was obstinately set in his own formulæ and ways of manipulating. A boy starting out to learn the business, should be made familiar with the processes step by step, and gradually advanced to such difficult portions as developing and toning, and during this time of instruction we should keep his interest alive by allowing him to assist, now and then, during the posing and lighting; if he manifests any of the ideas which might in time make him a good person to handle sitters, train him for this also, by sending him to art exhibitions, or in default of these, set him on a regular course of art study from first-rate photographs and illustrated books. At the end of a year or eighteen months, we should expect a very fair assistant from a young man whom we had thus taught, so far as the mechanical parts of the business are concerned, and one in whose hands a large portion of the business could safely be left in the event of our own absence. In regard to the salary paid, we may call to mind that while the heavier parts of the work are best done by men, the operations of trimming and mounting prints and binding lantern-slides is quite as well, if not better done, by women and girls, who would probably consent to work for smaller compensation. Indeed the neatness of handling required in printing renders it a peculiarly fit employment for women.

Amongst other things that are in favor of the photographer from the business standpoint, are the lower insurance rates charged, and the lower price of apparatus. If those who quarrel with the insurance rates, had been in active business a few years ago when ether and gun-cotton had to be kept on hand in comparative large quantities—and risks paid accordingly—they would see how vastly things have changed for the better since the introduction of gelatine plates. The lower prices of apparatus, even in spite of the high wages demanded by skilled labor, show that there has been improvement in making the apparatus of a solid, practical character without unnecessary outlay of the skilled labor in excessive finishing, so that the camera (or whatever else it might be) was made to resemble a piece of ornamental bric-a-brac.

In concluding, we can truthfully express our feelings as being, on the whole, well satisfied with matters in general, and can thankfully say, in the words of a well-known volume, "Godliness with contentment is great gain." ELLERSLIE WALLACE.

TRAITE ENCYCLOPEDIQUE DE PHOTOGRAPHIE. By Dr. Chas. Fabre. (Paris: Gauthier-Villars and Fils.) The number last to hand finishes the subject of printing on silver paper, dealing most completely with the after-processes of enamelling and embossing portrait-prints, etc. Instructions for gelatino-chloride, bromide and transferotype work are next given, and include all particulars of the making of the papers. This encyclopedia has throughout been marked by the thoroughness with which the subjects have been treated, and the amount of somewhat obscure but useful information which it has contained. To the photographic experimenter and investigator the *Traité Encyclopédique* should prove an invaluable publication.

THE PHOTOGRAPHY IN NATURAL COLORS.

IN view of the widespread attention which the experiments in photographing natural colors by Francis de Veress, of Kolozsvár, as published in the *AMERICAN JOURNAL OF PHOTOGRAPHY* for May (pp. 132-3), has attracted in this country and Europe, we reprint a short notice on the same subject, as printed in an American magazine in the year 1851, together with the latest experiments on the same subject in France. Similar investigations are also being pursued by the leading photographic scientists in Germany, and we should not be surprised if something of practical value may result from this widespread interest and research.

The experiments (in 1850-1) for the production of photographs in natural colors appear to have been carried on simultaneously by Mr. Hill in this country and by several persons abroad. The *Athenæum* says that in some experiments made by Sir John Herschel a colored impression of the prismatic spectrum was obtained on paper stained with a vegetable juice. Mr. Robert Hunt published some accounts of the indications of colors in their natural order obtained on sensitive photographic surfaces.

These were, however, exceedingly faint, and M. Biot and others regarded the prospect of producing photographs in colors visionary,—not likely, from the dissimilar action of the solar rays, ever to become a reality. M. Becquerel has a process by which, on plates of metal, many of the more intense colors have been produced; but it appears to have been reserved for the nephew of the earliest student in photography, Niepce, to produce on the same plate, by one impression of the solar rays, all the colors of the chromatic scale. Of this process, called by the discoverer heliography,—sun-coloring,—we have had the opportunity of seeing specimens.

They are three copies of colored engravings,—a female dancer and two male figures in fancy costumes; and every color of the original pictures is faithfully impressed on the prepared silver tablet. The preparation of the plates remains a secret with the inventor, but the plate when prepared presents a dark brown or nearly a black surface, and the image is eaten out in colors. We have endeavored by close examination to ascertain something of the laws producing this remarkable effect; but it is not easy at present to perceive the relations between the colorific action of light and the associated chemical influence.

The female figure has a red silk dress, with purple trimming and white lace. The flesh tints, the red, the purple, and the white are well preserved in the copy. One of the male figures is remarkable for the delicacy of its delineation: here, blue, red, white, and pink are perfectly impressed. The third picture is injured in some parts; but it is, from the number of colors which it contains, the most remarkable of all. Red, blue, yellow, green, and white are distinctly marked, and the intensity of the yellow is very striking. Such are the facts as they have been examined by the *Athenæum*, and these results are superior to those which were given to the world when photography was first announced.

So much for the early experiments in this line. Coming down to the present day we find in *Le Moniteur* that at the meeting of the "Syndicat Général de la Photographie," May 9th of the present year (1890), M. E. Vallot exhibited a good photograph in natural colors, printed from a colored picture on glass. The method is thus described: Thick photographic paper is floated for three minutes upon

Water 100 parts.

Chloride of Sodium 20 parts.

and dried quickly. Sensitizing is done by floating the dried sheet for five minutes on

Water 100 parts.

Nitrate of Silver 10 parts.

It is then well drained and washed for ten minutes in running water. In order to remove the last traces of the nitrate, the paper is now placed for five minutes in

Water 100 parts.

Chloride of Sodium 20 parts.

and washed for a few moments. The next step is to form the violet modification of chloride of silver. This is accomplished by exposing the paper to the action of light in a bath containing 500 parts of water and 20 parts of the following bath :

Distilled Water 100 parts.

Protochloride of Tin 3 parts.

Sulphuric Acid 10 drops.

The paper is exposed until it assumes a deep violet color ; it is then washed for five minutes and dried. After drying it is washed for five minutes in a solution containing equal parts of the following :

A—Water 100 parts.

Bichromate of Potash 5 parts.

B—Saturated solution of sulphate of copper.

When dry, the paper is ready for exposing. The exposure to full sunlight under a colored painting on glass is not less than three-quarters of an hour. The colors are plainly visible after the exposure, but have a fogged appearance. The print is cleared and the colors made more brilliant by treatment with

Water 100 parts.

Sulphuric Acid 20 parts.

The prints must not be left too long in the bath, which at first improves the colors, but afterward destroys them. After a thorough washing, the prints are given a coating of albumen or gelatine to increase the brilliancy of the colors. Nothing is said about the use of hypo or the permanency of the prints, and we give the process for what it may be worth until we have had an opportunity of trying it.

THE PERFECT ANIMAL PHOTOGRAPH.—First and foremost it should have had sufficient exposure to bring out all possible detail in the hair or feathers, and in the shadows, detail being necessary in this branch of photography almost more than in any other. It follows, then, that the perfect photograph, though taken in soft sunlight (which should be avoided if possible), should not be an instantaneous one, but should have had a fair exposure. This means hours of watching and waiting, when a snap-shot might be obtained in a few moments, but, as I hope to show you, the resulting negative is very different. One is of little or no use ; the other may be of use to naturalists and artists for all time.

The perfect animal photograph, then, should be free from heavy shadows, full of life, yet unstrained, natural in position and expressions—all four legs and the tail should show distinctly, and the mane (if any), nostrils, ears, eyes, and hairs round them should be microscopically sharp.—GAMVIER BOLTON, F. Z. S., before Photographic Convention, Chester, Eng., 1890.

TONING BATHS.

THE following are formulæ for all the principal toning baths, and each is given in the form of a stock solution which may be diluted for use by adding $\frac{1}{2}$ ounce, or 12 c.cm., to 8 ozs. or 200 c.cm. of water, unless otherwise directed.

1.—ACETATE BATH.

Chloride of Gold	15 grns. or	1 grm.
Acetate of Soda	480 "	28 "
Dist. Water to make	7½ ozs.	200 c.cm.

2.—BICARBONATE AND ACETATE BATH.

Chloride of Gold	15 grns. or	1 grm.
Bicarbonate of Soda	30 "	2 "
Acetate of Soda	360 "	21 "
Dist. Water to make	7½ ozs.	200 c.cm.

3.—MAWSON'S COMPOUND BATH.

Borax	330 grns. or	19 grm.
Acetate of Soda	180 "	10 "
Bicarbonate of Soda	90 "	5 "
Dist. Water to make	20 ozs.	500 c.cm.

TONING BATH.

Stock Solution	10 drms. or	30 c.cm.
Chloride of Gold	1 grn.	.06 grms.
Dist. Water to make	10 ozs.	250 c.cm.

Mix two hours before using.

4.—ACETATE AND CHLORIDE BATH.

Chloride of Gold	15 grns. or	1 grm.
Acetate of Soda	360 "	21 "
Chloride of Lime	135 "	8 "
Common Chalk	360 "	21 "
Dist. Water to make	7½ ozs.	200 c.cm.

5.—ACETATE AND BORAX BATH.

Chloride of Gold	15 grns. or	1 grm.
Acetate of Soda	150 "	10 "
Borax	15 "	1 "
Dist. Water to make	7½ ozs.	200 c.cm.

6.—BORAX BATH.

Chloride of Gold	15 grns. or	1 grm.
Borax	900 "	56 "
Dist. Water to make	7½ ozs.	200 c.cm.

7.—BICARBONATE BATH.

Chloride of Gold	15 grns. or	1 grm.
Bicarbonate of Soda	450 "	30 "
Dist. Water to make	7½ ozs.	200 c.cm.

8.—PHOSPHATE BATH.

Chloride of Gold	15 grns. or	1 grm.
Phosphate of Soda	450 "	30 "
Dist. Water to make	7½ ozs.	200 c.cm.

9.—TUNGSTATE BATH.

Chloride of Gold	15 grns. or	1 grm.
Tungstate of Soda	450 "	30 "
Dist. Water to make	7 1/2 ozs.	200 c.cm.

10.—CHLORIDE OF LIME BATH.

Chloride of Gold	15 grns. or	1 grm.
Common Chalk	150 "	10 "
Chloride of Lime	30 "	2 "
Dist. Water to make	7 1/2 ozs.	200 c.cm.

11.—PLATINUM TONING BATH (Stieglitz).

Chloro-Platinite of Potash	30 grns. or	2 grms.
Oxalate of Potash	480 "	27 "
Phosphate of Potash	240 "	13 "
Dist. Water	10 ozs.	250 c.cm.

12.—PLATINUM TONING BATH (Clark).

Chloro-Platinite of Potash	15 grns.	1 grm.
Nitric Acid		1 or 2 drops.
Distilled Water		30 ounces.

13.—URANIUM BATH.

Uranium Nitrate	1 grn. or	.06 grms.
Chloride of Gold	1 "	.06 "
Bicarbonate of Soda	20 "	1.3 "
Dist. Water to make	10 ozs.	250 c.cm.

14.—URANIUM BATH.

Chloride of Gold	1 grn. or	.06 grms.
Uranium Nitrate	1 "	.06 "
Chloride of Sodium (salt)	20 "	1.3 "
Acetate of Sodium	20 "	1.3 "
Distilled Water	10 ozs.	250 c.cm.

15.—SULPHOCYANIDE BATH.

Chloride of Gold	15 grns. or	1 grm.
Sulphocyanide of Ammonium	180 "	6 "
Phosphate of Sodium	225 "	15 "
Hypsulphite of Sodium	4 ozs.	120 "
Dist. Water	20 "	500 c.cm.

In making and using the above baths there are one or two points worth noting. First of all the solid chloride of gold should be dissolved in a little of the water and sufficient chalk added to the same to neutralize any acidity; this liquid should be allowed to settle and the clear solution poured off. All solid salts should be added to the water, and when dissolved the solution of gold, neutralized as described, should be added last. The following baths should be kept twelve or twenty-four hours before being used, viz., 1, 2, 4, 5, 6, 15; and 3, 7, 8, 9, 10 should be kept for an hour or two; and 11, 12, 13 and 14 used immediately. With regard to the tones given by these baths we have already said something on this point, but for the convenience of those who want a particular bath to obtain a particular tone, the following may be of assistance: Brown tones are usually obtained by using 1, 3, 5, 6, 7; purple tones by 2, 4, 8, 9, 10, and 15; black, by 11, 12, 13 and 14.

In connection with this subject there is one fault which is worth noting, and that is *loss of tone in fixing*. This is sometimes extremely annoying, and the cause of it

sometimes seems more remote than at first sight appears. By some it is said to be due to a compound of copper formed from the alloy of the metal used; by others that this fault is due solely to the use of strong gold baths, which attack the surface of the pictures only, without sufficiently toning the whole of the image. This, however, is rather a chemical than a practical subject, and we have treated elsewhere of the chemistry of the toning bath. The remedies suggested are the addition of alkaline gold solution to the fixing bath as in the following formula:

Chloride of Gold	1 grn. or	.06 grms.
Carbonate of Soda	150 "	10 "
Hypo	4 ozs.	120 "
Water	20 "	500 c.cm.

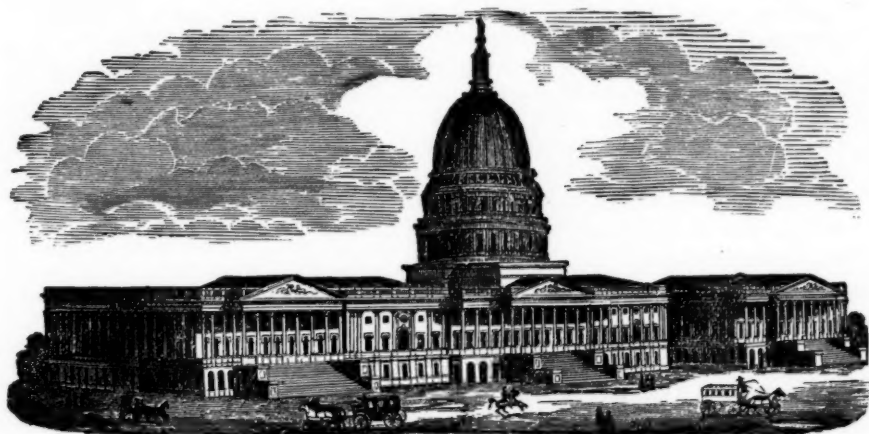
Mix the gold and soda with a little water, and add to the hypo dissolved in the remainder of the water, and this will be found of great service. Another fault which is connected with toning is that of yellowness of the whites. This is often seen when the toning bath is too alkaline, and appears to be due to some secondary decomposition or combination.—*Photographic Answers.*

CHROMO-PHOTOGRAPHY.

THE statement is again made in the public press that photography in natural colors is an established fact. This time the report emanates from New York, and states that Mr. E. Bierstadt is the fortunate discoverer. He vouches the information that his object is attained by means of four negatives, representing the red, blue, and yellow colors, and a neutral tint, each negative being made to represent its proper color only. If we understand this announcement correctly, this is not photography in natural colors by any means, but merely a process of impressions in printers' or lithographic inks from orthochromatic photo-gelatine plates, a comparatively old process, which is commercially worked in its different phases in Germany, noteworthy being the patented process of Wezel and Nauman of Leipzig, who lately exhibited a beautiful specimen of their process provided from zinc plates in eighteen different tints, all of the plates being produced from one negative. The color blocks are produced on zinc plates coated with a special sensitive preparation, the time of exposure and development regulating the color to be printed from the block; viz: for the light tints a long exposure and weak development is necessary. With normal exposure and development the contour plates are obtained, while for the heavy dark colors a short exposure and strong development is required. As many colors as are wanted so many different zinc plates are requisite, after which the plates are etched with phosphoric acid, and such portions as are not wanted are routed out, leaving the zinc block same as a lithographic stone. All this, however, is not photography in natural colors, but merely chromo-lithography in an advanced form. It will not be photography until the colors are produced by the light reflected from the particular colors in the subject.

J. F. S.

FOR blocking out statuary for lantern slides, take mastic or copal varnish, with which has been well mixed up some lampblack, until when spread upon glass it is quite opaque; if too thick, thin with a little turpentine.—*The Optical Lantern Journal.*



THE CONVENTION AT WASHINGTON.

The Photographers' Association of America will hold its annual convention at the Smithsonian Institute, Washington, August 12th to 15th inclusive. The grand prize is offered for the best print from a negative suggested by Tennyson's "Enoch Arden." During the convention week the memorial to Daguerre will be unveiled.

Following is the list of wards, and hotel and railroad rates.

The list of awards for 1890 is as follows:

The Grand Prize will be a group in bronze, entitled "Nearing the Goal," value \$225, governed by the following rules and regulations:

Competitors for this award shall exhibit three plain photographs, illustrating Tennyson's poem of "Enoch Arden," the pictures not to be less than 13 or more than 22 inches in length.

The pictures must be framed, either with or without glass. The award to be made for the most meritorious collection.

Class A.—A beautiful silver "plaque," mounted in plush, representing "Victory," for the best exhibit of genre photographs.

Competitors for this class shall exhibit six photographs. The subjects are to be chosen by the photographer and appropriately inscribed. Size not less than 13 or more than 22 inches in length, and framed with or without glass. The award to be made for the best collection.

Class B.—One gold, one silver, and one bronze medal for the best collection of portrait photography, size 14x17 inches, or larger.

Class C.—One gold, one silver, and one bronze medal for the best collection of portrait photography, size 11x14 inches, or smaller.

Class D.—One gold, one silver, and one bronze medal for the best collection of landscape photographs. One silver and one bronze medal for the best collection of marine views. One silver and one bronze medal for the best collection of architectural views.

Class E.—One silver and one bronze medal for the six most artistically retouched negatives, any size; prints made before and after retouching to be exhibited with the negatives.

Class F.—One silver and one bronze medal for the six best plain enlargements, either in silver, bromide, albumen, carbon, or platinum, size not less than 18x22 inches.

Class G.—One silver medal for the best improvement in photographic appliances introduced since the last convention.

Class H.—One gold, one silver, and one bronze medal for the best foreign exhibits of portrait photography, framed or unframed, but delivered to the Association free from all charges.

Exhibits in this class will be admitted to the United States free, by sending the same directed to the Secretary of the Photographers' Association of America, Washington, D. C.

Applications for space must be made to George H. Hastings, 147 Tremont St., Boston, Mass., who will forward blanks for entries and all needful information.

The headquarters of the Executive Committee will be at the Ebbitt House, rates \$2.50 to \$3.00 per day. The Arlington, Riggs, and Willard's, \$3 per day. The National and Metropolitan, \$2.50 per day. The St. James (European plan), \$1 per day for rooms.

All the R. R. Traffic Associations make the rate of a fare and one-third, certificate plan, your local agent furnishing the certificate. By paying full fare going, you are entitled to one-third fare returning, if your certificate has been signed by our R. R. Committee, W. V. Ranger.

N. B.—See that your certificate is signed by yourself and local agent, before starting.

We shall be most happy to see you all at Washington, August 12.

Fraternally yours,

J. M. APPLETON,

President P. A. of A.

THE following is said to be a reliable eikonogen developer, giving a density equal to pyro, and will keep well for a long time in two solutions:

No. 1.

Sulphite of soda	6 ozs.
Hot water	60 "
Eikonogen	1 oz.

Shake the bottle well to make the eikonogen dissolve.

No. 2.

Carbonate of potash	4 ozs.
Water	22 "

To develop normally exposed plate: Add to 4 ozs. of No. 1, 1 drachm of No. 2; after the image has begun to appear, add from 1 to 3 ozs. of No. 2 to give density. The negative gets so dense that you have to hold it up to the window of the dark-room lantern to see what is in it; then immerse in hypo bath, after which it will not be too dense. The same is also very good for bromide paper.

AMATEUR EXPERIENCES.—V.—“A PHOTOGRAPHIC DUDE.”

EDITOR AMERICAN JOURNAL PHOTOGRAPHY:

I HAVE a new experience to report, and, varied as my photographic kaleidoscope has been, all previous trials were thrown into the shade by my late adventure. It came about in this way: I started out for an afternoon's trip through the Great Chester Valley, in the vicinity of Valley Forge, for a chance shot at some of the historic landmarks with which the locality abounds. So, getting off the train on the Pennsylvania Railroad at Devon, I started north on the macadamized road which leads into the valley. Well, I had trudged along about a mile, outfit and tripod in hand, and beads of perspiration on my brow, when coming to a turn in the road where bursts into view the magnificent stretch of farmland known as the "Great Valley," while feasting my eyes on the beautiful panorama below, I was awakened from my reverie by the trample of a horse's foot. Stepping to one side I saw a spanking turnout: one of these vehicles where the footman sits with his back to the driver—the latter reigned up, and with a drawl inquired the road to the house of a Mr.—well, I will say Barclay, a well-known Quaker farmer in the valley. I directed him, and he went on without so much as a "thank you." He had not driven but a few rods when a turn in the road brought into view an old disused limekiln, so frequently met with in the valley. It was a picturesque bit; the driver stopped, and said a few words to his flunky in the rear, who respectfully saluted and dismounted; the driver followed. I also stopped to see what was coming. The smaller of the two men, of medium height, seemingly about twenty-five years of age, faultlessly dressed in silk pongee coat, russet shoes, silk shirt, and light pants, with a bright crimson silk sash around his waist, turned to his companion—footman, lackey, or servant, call him what you will, who rejoiced in a full livery from cockade on his hat down to his boots—and, pointing to the old limekiln, said with a drawl: "Jeems!" "Yes s'r." "Set up." "Yes s'r." Every "Yes s'r" being followed by respectfully raising his hand to the rim of his hat. Well, what was my surprise when I saw the footman bring out from under the carriage seat a photographic outfit, all of English make; first came the mahogany tripod, silver tipped; next the camera, also silver-mounted; then the battery of lenses. After the proper one was selected by the master, the latter simply pointed to the limekiln. The footman answered with a respectful salute, took off his hat, and stuck his head under the silk velvet focusing cloth; after moving the camera several times, when at last a satisfactory view was obtained on the ground-glass, he turned to the master, and with a salute said, "Sharp, sir?" The former, who had so far stood listless by, now put his head under the velvet:—"Jeems"—"Yes, s'r"—"Expose"—"Yes s'r." So the servant put in the plateholder, adjusted the stop, and deferentially handed the bulb to the master, and drew the slide; then, touching his hat, said, "All ready, sir," when the other simply pressed the bulb: the photograph was taken, and the servant returned the slide, took out his pencil, touching his hat to signify that he was ready; the master drawled out, "Ruins of old fort from the revolution." During all this time I stood aghast, wondering if I was awake or asleep. I moved a little closer. I looked and wondered, and, being endowed with considerable assurance, I resolved to introduce myself to the exquisite amateur, although I did

not feel that the bond of sympathy was great between us. I greeted him with, "Taking photographs, mister?" The reply I got was to excuse him, but really "he didn't recollect ever having the honor of an introduction." This was accompanied by a look of *ennui* and contempt. I felt my insignificance; McAllister's 400 at once came into my mind, but I drew a deep breath to keep up courage. So I told him that I was a member of the Leopardville Camera Club, and also took photographs, and if I could be of any service to him, being acquainted in the locality, I would be glad to offer my services if desired. Well, the answer came with a drawl: "Jeems,"—"Yes s'r"—"Tell that fellow to go about his business."—"Yes s'r." Then the flunky, with a wave of his hand, pointed down the road and said "Be off." Well, to say I was mad is no name for it. All the Fourth of July in my constitution boiled within me. My first impulse was to resent the insult; however, an idea flashed through my mind. The dude and his flunky were going to Friend Barclay's, and I determined to play a joke on the dude, and give him a lesson; so, jumping into the field, I took a short cut to find Barclay's. The latter is an old Friend, one of the sixth generation, to occupy the old farm, and known for his sterling honesty and simplicity; his ancestors, notwithstanding their religious principles, had been among the first to don the blue and buff, and serve under the gallant Perry and impetuous Wayne. After greetings were over, I informed Friend Barclay that I had good reason to believe that his peaceful home was about to be invaded by a pair of photographers from town, for what purpose I did not know, but it would be as well to be on guard for fear that they were in the interest of one of those rose-colored New York illustrated papers of questionable morality; further, as there are so many wolves roaming around in sheep's clothing, to impose upon the unsuspecting farmers in the valley under one pretext or another, I thought it was no more than right to post him about the visitors.

The notification had its effect, as the sequel will show. Scarcely had I finished when I saw the handsome drag turn into the lane. So I went back of the house to await results. Well, they came. After dismounting, the master took a card from his case, handing it to his footman—"Jeems." "Yes s'r,"—with his drawl said, "Take my card to that fellow on the porch, and tell him Mr. Algernon de Percy Smythe wishes to take a photograph of his house, also of the room occupied by My Lord Cornwallis during the Revolution; also, if he has any relics about the house to arrange them in this room." Well, Jeems delivered the message. Friend Barclay never changed a muscle. His face was as serene as a summer sunset. Stepping down from the porch, he said to the master, "Friend, what does thee want?" The request was repeated. "Well, friend, is thee not presuming a great deal? I do not want any pictures taken of this house." The exquisite now ventured an explanation, viz., that lately an organization had been formed in Philadelphia, known as "*The Sons of the Loyal Gentlemen of the British Provinces*" the object of this society being to preserve the names and history of such gentlemen as had remained loyal to the Crown of England during the Revolution; also to mark by lasting memorials such houses as were occupied by British officers during the struggle, and the intention was also to mark such places, as soon as funds were obtained, where loyal valor had gained signal victories over the rebel hordes under Washington. Friend Barclay was a good listener, but he had no time for an anglo-maniac. During the conversation the demure "Jeems" had set up the camera. So turning to the speaker,

he said, "Friend, suppose I came to thy house on Arch or Broad street, with a box and sticks like thine"— "Excuse me, sah," broke in the visitor, "I reside on St. George's Place, south of Market street, if you please." "Well, friend," continued the Quaker, "What would thee do if I was to intrude myself on thee?" "Ah, my dear sir," was the reply, "the case is entirely different; you are only a common farmer man; I am a gentle"— He got no further. Barclay's patience was exhausted. He called, "Patrick,—Patrick" (this was his hired man, who had been also taking in the whole show). The latter stepped out with alacrity, bringing his hand up *a la* "Jeems." Friend Barclay continued, "Patrick, thee will eject these two persons, peacefully if possible, but forcibly if necessary—and do it quickly." "Throw 'em out in the road, is it, sur?" queried the farm-hand; "bedad, I can do the same." It would be hard to say who was the more surprised, the master or the man. The scene formed a group seldom met with. The nonplussed representative of the S. of the L. G. of the B. P., with his English flunkey; the calm, serene face of Friend Barclay; the willing Irishman; and last of all, the solitary member of the Leopardville Camera Club, with a smile on his face as broad as that of the discomfited dude was long,—all tended to make up the picturesque group. Patrick was the first to break the spell. Turning to the flunkey he said, "Jeems, me bye, git;" and the flunkey, picking up his outfit, lost no time in reaching the lane. The master by this time had regained his speech, and turning to Friend Barclay, said, "Fellow, do you know that I am Mister Algernon de Percy Smythe, and that you have insulted a gentleman, and I shall have satisfaction." Patrick, turning to him with a twinkle in his eye, answered, "Well, Mr. Algernon de Percy Smythe, do yees want to take any satisfaction with yees? if ye do, why I will give ye all ye want—right now"—following up his words with an unmistakable action of his clenched hands. Smythe lost no time in backing towards the gate, and jumping into his drag, started out of the lane. What he said was lost through the clatter of the horse's feet on the dusty lane.

Friend Barclay, as serene as ever, said not a word about the occurrence, but merely turned to me and invited me to walk in and stay to supper, an invitation which I readily accepted. Should this letter come to the notice of the Honorable Algernon de Percy Smythe, I hope that he may derive a lesson from his humiliation and the joke set up on him, remembering the moral, "Never to look down upon a brother amateur because he belongs to a country club."

J. FOCUS SNAPPSCHOTTE.

It appears as if photography is going to push its way in every direction. We hear from Berlin that at the suggestion of Professor Dr. Leyden, Dr. Brettner, of Berlin, has made experiments in fixing the facial expression of sick people by means of photographs. He fixed his camera in the wards, and protected the persons whom he photographed by means of screens from the gaze of others. For those who were only slightly indisposed or convalescent the occurrence provided somewhat of a diversion, and others, who were very ill, seemed indifferent to the process. Facial expression is another field for the amateur, and we could suggest many subjects, without dealing with the sick and afflicted.—*Photography*.

PHOTOGRAPHS AS EXTRA ILLUSTRATIONS:

IT is frequently the case that the owner of a fine work on travels, etc., who desires the most effective illustration and result, furnishes to the binder unmounted photographs for insertion, and it is highly requisite that the latter should be possessed of advanced information as to the best methods of doing the work, so that it shall not present wrinkles, but shall be flat and even to the eye.

Some suggestions were given in an English journal, *The Bookbinder*, not long since, that may be observed to advantage:

A silver-print photograph should never be placed on a very white mount, because the high lights of the print are never pure white, and a bright white margin round the print spoils its beauty by killing its delicate half-tones. Lay the reprint on paper of various tones, and select the tint that harmonizes with it best. Next, pay attention to the mixture you use to fasten it; let us call this the mountant. This cannot be too pure. If you use starch, which is employed, we believe, more than any other paste, make it fresh every day, and in this way: Take a teaspoonful of best starch in a large cup, add just enough cold water to break it up, but don't put in more than is quite necessary; pour boiling water on it, stirring the while, until it is quite transparent; when cold it may be used. Or, if you wish to use paste, take a teaspoonful of corn flour, beat this well up in a teacupful of water till it is quite smooth and there are no lumps; place this in a porridge saucepan (that is, a double one), and let it boil, stirring it continually; it will turn to a delightfully thin and transparent paste, that will be easy to work with and very adhesive. Gelatine dissolved in water—say a half ounce to a teacupful—is also a very good mountant. It must be of the best quality, and ought to be used hot.

Now for the difficult part of mounting. We will give three methods:

(1) After trimming the print all around, moisten it slightly (the object being to have it limp without stretching it) by placing it between sheets of damp paper over night, and it will be about right next morning. Damp the mount, also slightly paste your print very carefully all over (using no more paste than is quite necessary), lay it carefully on the mount, cover it with a piece of clean paper, and rub it down well, and then place it in the standing press, between pieces of blotting-paper, and allow it to dry under pressure. It may be perhaps necessary to take it out of the press, and change the blotting-paper. If this be done properly, the photograph and its mount will lie quite flat.

(2) Another plan is to paste the back of the print all over, and allow it to dry; damp the mount, lay the print on the damp mount, and pass them through the rolling machine, or place them in the standing press under strong pressure.

(3) Take a piece of lithographic stone, or a thick piece of glass; glue this all over with gelatine, place the photographic print quickly down on the glued stone, rubbing it smartly all over; then pick it up and lay it down on the mount. All these actions must be rapid, and if done properly by this method a photograph may be easily mounted even on thin paper without cockling.

There are other methods, but with any one of these a binder may easily, cleanly and properly mount a print on any size, the chief object being to get the print on to the board or mount before it has any time to stretch. As a final warning, see that the mounts are not boards made from wood-pulp.

DEVELOPERS FOR LANTERN SLIDES.

JAMES Shirley Hodson, F.R.S.L., in the *Camera* gives four separate formulæ for lantern slides. From these the amateur can take his choice; either one should give clear whites. In our own practice, however, we still incline to the ferrous oxalate as giving the best results. A modification of the compound developer of eikonogen and hydrochinone, as given elsewhere in this JOURNAL, however, may prove to be the ideal developer for lantern slides and transparencies. We expect to make some experiments with the French formulæ in the near future, the results of which we will lose no time in laying before our readers.

PYROGALLIC DEVELOPER.

A.—Pyrogalllic acid	40 grs.
Pure sodium sulphite	16 "
Citric acid	5 "
Water to make	10 oz.
B.—Liq. am. fort	40 minims.
Pot. bromide	40 grs.
Water to make	10 oz.

Equal parts of the two solutions to be mixed at the time of using.

FERROUS OXALATE DEVELOPMENT.

The saturated solutions of potassic oxalate and iron sulphate may be used in the proportion of three or four parts of the former to one of the latter, with the addition of one grain of potass. bromide to each ounce of developer, adding more bromide and increasing the amount of exposure when warmer tones are required.

To keep the iron solution from oxidising, one drop of sulphuric acid should be added to each ounce of water before dissolving the salt.

The ferrous oxalate gives a blacker colored image than pyrogalllic developer.

HYDROKINONE DEVELOPER.

A.—Hydrokinone	40 grs.
Sod. sulphite	120 "
Pot. bromide	5 "
Citric acid	5 "
Water to	10 oz.
B.—Potass. hydrate	80 grs.
Water to	10 oz.

Equal parts of each. Several plates can be developed in the same solution.

EIKONOGEN DEVELOPER.

A small proportion of bromide must be used to ensure absolute clearness in the unexposed parts.

A.—Sodium sulphite	400 grs.
Potass. bromide	5 "
Eikonogen	100 "
Water to make up to	10 ounces.
B.—Sod. carb.	320 grs.
Water to make up to	10 ounces.

Equal parts of each to be mixed together at time of using.

Developing lantern plates is an easy matter to any one who may be tolerably expert at the development of ordinary negatives, because the mode of procedure is

almost identical. Develop until the detail of the picture has appeared, and is just at the commencement of the stage when the brilliancy of the detail is becoming obscured; then remove the plate from the developing dish, wash in clean water, and place it in the fixing solution (hypo-sulphite of soda, four ounces to one pint of water) until the image is thoroughly cleared. Before treating the plate to the alum bath, again wash, and after having submitted it for a short time to the hardening process caused by the alum, let the plate have a good soaking in several changes of water to remove all traces of the hypo. Some persons urgently recommend that in using the pyro developer the alum bath should precede the fixing; and in order to avoid stains in the unexposed parts of the plate, to the fixing bath should be added one part of bi-sulphite of soda to five parts of hypo. Should stains appear, however, through sluggishness in developing, they may be removed by dipping the plate for a few seconds in the following solution:

Hydrochloric acid	½ oz.
Strong solution of perchloride of iron	¼ oz.
Water	20 oz.

and then place the plate in a fresh hypo bath. When intensification seems to be needed, the ordinary mercury formula may be adopted with advantage.

THE COMPOUND EIKO-HYDROQUINONE DEVELOPER.

AT the last meeting of the Parisian Photographic Club an interesting discussion was indulged in, respecting the merits and advantages of the new developer composed of hydroquinone and eikonogen. Attention was called to the fact that many formulas had of late been published lauding the praises of the compound developer. Each special publisher claiming that the mixed developer was far superior to either of the two separately, as it acted as energetic as eikonogen, without the danger of fogging the shadows, and at the same time showing the characteristic density of hydroquinone. Those statements were confirmed by several members present who had tried the compound developer.

Following formula was recommended as giving the best results.

Sulphite soda	100 g.
Eikonogen	15 g.
Hydroquinone	5 g.
Dissolve in hot water	1 litre.
After the solution has cooled off add carbonate potash . .	50 g.

Attention was called to the fact that much depended upon the temperature of the developer. In this direction several interesting and useful experiments were made. A number of exposures were made on one object under exceptionally favorable conditions, a perfect negative resulted from 6 sec. exposure, temperature of developer at 20° C., with temperature at 30° C. same results were obtained with exposure of 4 sec. Contrary, when developer was reduced to 10° C. the same subject required an exposure of from 12 to 24 seconds to obtain the required density.

A CAUTION TO PHOTOGRAPHERS.

AS quite a number of photographers who attend the Convention in Washington have expressed a desire to take a trip to England and the Continent after the Convention has adjourned, for the express purpose of extending their photographic knowledge, and to become thoroughly familiar with the latest European methods, we consider it our duty to the craft to sound a note of warning to all such as contemplate an extension of their trip to Germany. As will be known to many, a systematic effort has been made ever since the termination of the Franco-Prussian war to expunge from the German language all words, expressions and terms of foreign origin. How thoroughly this has been done will be apparent when we take for example the German substitutes for the two universal words telegraph and telephone,—viz.: *Electrischerfernschreiber* (Electric distant writer), *Fernsprecher* (distant-speaker). For some reason still unexplained, photography and its attendant terms escaped for the time being. It is now stated, on apparently good authority, that one of the first edicts issued after the resignation of Prince Bismarck, was an order relative to the expurgation of all foreign words which crept into the German language in connection with photography. The result of this is, that the tourist who visits Berlin, and looks for the formerly familiar signs "*Photographisches Atelier*" looks in vain. Nor would the uninitiated stranger be much the wiser if he gaped for an hour at the brand new sign over the entrance to one of Berlin's most celebrated galleries :

FRIEDRICH WILHELM RECHTECHTTEUTSCH,

H. u. K. Hof.-Lichtbildner,

LICHTBILDNERWERKSTATT.

If his curiosity should overcome him, and he should enter the establishment, he would be surprised to find himself in an everyday photograph gallery. But even after entering the portal with the sign *Eingangsstube*, and being met with a polite reception from the *Empfangsfraulein*, he would not be less confounded, if he should point to a cabinet size and ask the price, and be told that *silberpauslichtbilder in schlafstubengrösse* cost so much, but in *damenzurückziehsinnmergrösse* the price is so many marks higher. All this confusion is merely the result of the improvement in the German language. If the seeker after photographic knowledge would have a personal interview with the proprietor, he would send his card to the *Herr Hauptlichtbildner*, or if his business laid with the operator he would simply ask for the *Dunkelkammersachverständigen*. The much abused amateur is known no more within the Imperial realm, he has vanished forever. His successor is the *Herr Liebhaberlichtbildner*,—a just punishment for his many shortcomings.

For the benefit of such members of the Eleventh Convention as propose a trip through Germany, we will give a few of the new German substitutes for our familiar terms: viz., skylight, *glasshaus*; printing-frame, *abklatschrahmen*; printer, *lichtpauser*;

retoucher, *bildverschönerer*; burnisher, *heissglanzvorrichtung*; carte, *besuchsbrustkarte*; transparency, *durchsichtsbild*; mount, *pappe*; negative, *gegenbild*; albumen paper, *eiweisspapier*; positive, *lichtpause*; photography, *lichtbildnerie*; photographer, *lichtbildner*; tripod, *stativ*; printing, *lichtpausverfahren*; silver printing, *silberpausverfahren*; blue print, *eisenpausverfahren*; orthochromatic, *farbenempfindlich*; leimtype, *leimlinienhochdruck*; photogravure, *lichtgalvonotondruck*, etc. Before passing this subject another word of caution: should any one of our photographic friends at any time be in a German dark-room, and have the misfortune to be out of reach of the lid of his dry-plate box, and wish his brother *Dunkelkammersachverständiger* to hand it to him, let him be sure to ask for "*dendeckeldesbromsilberleimsuozdrockenplattenkästen*," if he wishes to be understood.

It is stated that in view of these changes in the nomenclature, there has been a marked falling off in the photographic industry; further, that since the introduction of these synonyms, there has been a steady increase of the population of the various lunatic asylums throughout the Fatherland from photographers who tried to comply with the Imperial edict. One fatal case is also announced, that of a German photographer, who returned to Berlin after a long sojourn in the Congo basin, and who knew nothing of the expurgation during his absence. It is stated on the day of his arrival he stepped up to a newstand and asked for a copy of the *Photographische Wochenblatt*. The attendant told him she was sorry not to be able to serve him, but perhaps he meant *Das Lichtbildnerische Wochenblatt*, which was the leading *Zeitschrift für Lichtbildnerie*, handing him at the same time a copy of Dr. Mieth's well-known publication, resplendent with its Germanized title.

The old German gave one gasp and expired.

J. F. S.

PICKED PHOTOGRAPHIC PEAS.—It is unnecessary for us to state that the following circular emanates from Boston, and was issued by an ingenious photographer to increase his business:

PICKED PEAS!

PERSEVERENCE PRODUCES PROSPERITY.

Patriotic people, particular persons, prudent purchasers, philanthropic patrons, pretty pinks of perfection, patient pedagogues, pert pupils, peacemakers and philosophers, please provide plethoric purses, protruding prodigiously, protecting plentiful pay, pickled purposely to propitiate the photographer.

Proceed to promenade in the public procession, proudly, promptly and perseveringly pressing, and persistently pushing, in promiscuous parties and precise pairs, for the praiseworthy purpose of procuring perfect photographic pictures patiently produced and properly prepared at the picture place, by a practised photographer, perpetually performing parts particularly pertaining to photography.

Present placid, pleasing physiognomies for permanent photographers to put prominently in parlors, to prove precious portraits of past progenitors, possessed and prized by proud posterity.—*Photo. Review.*

THE USE OF THE SCREEN WITH ISOCHROMATIC PLATES.

THE yellow screen was first suggested for use with ordinary plates by Sir William Crookes, when editor of the *Photographic News* many years ago, and on the introduction of isco or orthochromatic plates, the screen was used to so lower the intensity of the actinic rays as to lower the action of the same on the plate. In landscape photography, the yellow screen is at once a valuable ally, which may be used in certain cases, and which, however, may equally as well become a hindrance for truthful results if improperly used. The effect of a screen may be well seen by looking through a piece of ordinary pale yellow tinted glass at a street view in London, not on a foggy day, but on a dull misty day, as I write this, seated at my desk I can command a vista of a London street, and half way down at a distance of two hundred yards is a large public house, further down, at another two hundred yards is an advertising board, on which are some huge blue and white enamelled signs—which I always use on a clear day for focussing my lenses, and testing the same, well, at the present moment that board is invisible, and no one who did not know it, would presume for one moment to say what it was, yet if I take up one of my screens and look through it, I can see distinctly those signs as though it was absolutely clear, and this is exactly how it acts with the lens and plate. When the blue mist hangs over a landscape too much, then I use my screen, but, on a clear day I discard it altogether as unnecessary, because its use then would destroy the charm of atmosphere and distance.

For portraiture I never use it, unless I am working in a very bright light, and my sitters are "clothed in samite, mystic, wonderful," and wonderfully white, then the detail I can get in white drapery is astonishing, and such a thing as a hard and chalky print I never get.

For copying oil paintings I *never* omit the use of the screen, and for this work I have three of different degrees of shades, which are square in shape, mounted in velvet lined brass frames, which are made to slide one inside the other, and thus I am enabled to obtain almost any depth I may require. The effect of the yellow screen is extraordinary when copying oil paintings or colored objects, it cuts off all brush marks, cracks and canvas reflections, and gives beautifully soft negatives, the prints from which are a pleasure to look at. One or two of my artist friends have been so much struck with the copies of some old masters which I possess done in this way, that they have been induced to take up photography solely for copying pictures.

I have often heard it said, and often seen it written, that a yellow screen gives an iso or orthochromatic effect with an ordinary plate, my opinion of a man who says this is that he is not a fool, but a deliberate fibber, if not worse. No one who has ever tried this once would ever make the statement. And I most emphatically deny that a yellow screen has any effect on an ordinary plate, except to make the negative worse than it would otherwise be,

Now a few words as to the screen—in the first place, don't go and get a bit of ordinary yellow window glass, and think you have got a screen, because you haven't. A screen to be of any use must be optically worked of absolutely plane and parallel faces. I always obtain my screens in sheet from a London dealer, and cut them up

to size to suit my lenses, they are thus much cheaper, a 3-inch square costing about three and sixpence. To test a screen, I hold it at an angle of about 45° some little distance from a window, and note whether the cross bars of the window are duplicated or not, they most likely will be, or at least you should so adjust the screen till they are. I then turn the screen round and note whether the duplicate images cross from right to left or *vice versa*, if they do I reject the screen, because then the faces are not parallel. Another method which I use when I am in doubt is to focus some fine line drawing, with the lens at full aperture, and sufficiently near so as to obtain rather a large reproduction on the focussing screen, the image is obtained critically sharp by means of my little focussing magnifier, and circle of clear glass in the centre of the screen, then the yellow screen is inserted in position, and the image is again examined, and if not as sharp as before, the screen is rejected. It is quite possible to make screens of collodion and gelatine stained with aurantia, but I have quite rejected these as unfit for anything more than experimental work, on account of their fragility and tenderness.

The position of the screen is not an important point, before, behind or between the lens combinations is a matter of perfect indifference, provided the screen is optically perfect. It has been suggested that one of the components of a doublet should be coated with collodion, stained with aurantia, and this I tried, and did not bless the man who proposed it, as some of the collodion crept under the lens mounting, and caused a tree-like marking in the canada balsam separating the two lenses.

There is also one branch of photography in which a screen is absolutely indispensable, and that is cloud photography. I consider that it is utterly impossible to obtain truthful cloud studies except by using a yellow screen, and orthochromatic plates. But I must defer this subject till another month, or the editorial equilibrium will be upset at the length of my paper.—*Photographic Answers*. F. C. S.

A NEW METHOD OF INTENSIFICATION.

R. S. LIESEGANG, in *Photographisches Archiv*, No. 649, publishes a novel process for intensifying weak negatives, in which the actual film is not affected or changed in the least, consequently there is no danger whatever of destroying the negative, as too often happens. The process is as follows: The negative is first varnished in the usual way, then it is again coated with collodion or varnish, in which has been dissolved red or green aniline coloring matter which is sensitive in light. The negative is now exposed to the direct light so that the rays strike through the negative; the latter bleaches out on the clear places, while on the half tones and shadows it remains unaltered or graded according to the depth of the shadows, consequently intensifying the darker parts of the negative in the correct proportion of the density. Unfortunately, aniline colors having these properties are not permanent, so that with the use of such negatives the intensification gradually fades. The process can then be repeated.

Dr. Liesegang further says, that perhaps some of the iron salts such as are used in the blue-print process, might be substituted for the aniline colors. This, however, would call for a redevelopment of the negative, but would give permanent results.

S.

SENSITIZING CANVAS FOR ENLARGEMENTS.—The simplest method of making enlargements on canvas is by collodion transfers, but the following will be found a good method of sensitizing canvas: The canvas must be first carefully washed with dilute ammonia and water, to remove greasiness, and then with a little distilled water. Brush over it the following solution:

Gelatine	100 grs.
Potassium bromide	200 "
Water	10 ozs.

When dried, float on a 30-grains solution of silver nitrate; expose when fairly dry, and develop with

Pyrogalllic acid	2 grs.
Citric acid	1 "
Water	1 oz.

Fix in hypo—

Coating the canvas with gelatino-bromide emulsion is very easy, but it is very liable to peel off, and soon goes stale. The following is very excellent, and the prepared canvas can be kept for months before applying the silver:

Iodide of potassium	80 grs.
Bromide of ammonium	35 "
Chloride of ammonium	10 "
Gelatine	60 "
Albumen	1 oz.
Distilled water	10 "

Mix, and gently warm until the gelatine is dissolved; clean the surface of the canvas (if it be prepared for painting in oil) with ammonia $\frac{1}{2}$ oz., methylated spirit 2 oz.; apply with a soft cloth until the greasiness has disappeared, and allow to dry thoroughly; then apply the above solution evenly with a clean sponge, and when dry sensitize with

Silver nitrate	1 oz.
Glacial acetic acid	$\frac{1}{2}$ "
Distilled water	12 "

Pour a small pool of this in the middle of the canvas, and spread all over with a ball of cotton wool, and in about one minute, and whilst still wet, expose—about one minute is enough for an enlargement of six times—and develop with

Gallic acid	60 grs.
Acetate of lead	10 "
Distilled water	10 oz.

Filter and apply in the same manner as the silver solution, and then with the *same* piece of cotton wool (then throw it among the residues), for the little silver it contains will give vigor; when this is completed, rinse, and fix in hypo 4 to the pint of water, and wash; the fixing and the wash after can be accomplished by allowing the canvas on its stretcher to float face down, and the canvas need not be detached from its stretcher at all by the use of this process, and the image *will not* strip under any circumstances. A modification of development is, after the paper is sensitized, to *directly* apply the developer, and allow it to soak for a minute. Then place the canvas in position, and expose; the development will then proceed with the exposure, and can be watched by the aid of a lighted thin taper, and, when all the details are out, you may strengthen with a little fresh developer. No loss from incorrect exposure by this method.—*Photography.*

GENERAL NOTES.

ORTHOSKIAGRAPHIC PHOTOGRAPHY.—“Die Photographie mit Brom Silber Gelatine,” by Ludwig David and Charles Scolik, of Vienna, Wilhelm Knapp-Halle, A. S., Part I., Vol. II., has just been issued from the press, and will prove a work of the greatest importance to the photographic student, as it will be a standard of reference to the professional and advanced amateur, and being the joint work of two of the most celebrated photographers of Vienna, representing both the professional and amateur branches, the facts are given from both standpoints. For practical information, the work is exceeded by none and equalled by but few of the numerous editors of the photographic press.

Part I. Orthoskiagraphische photographic deals exhaustively with the different modes of obtaining the true color values. Comparative plates are given, which must remove all doubt from the mind of the reader as to the superiority of the orthochromatic plates. We expect in our next issue to reproduce some of Brother Scolik's experiments and results.

Part II. deals with failures such as we meet with every day; it gives their cause, also the remedy.

Part III. is a collection of valuable recipes and formulæ, with which we also expect to acquaint our readers in a subsequent issue.

The frontispiece a heliogravure of Her R. H. Marie Theresa, Grand Duchess of Austria; the negative is by Charles Scolik, the mechanical work by the Imperial Institute of Austria. We congratulate Messrs. David and Scolik on the success of their undertaking. Subscriptions for the complete work may be sent to the publication office of the AMERICAN JOURNAL.

WE are in receipt of the third edition of Captain Pizzegehelli's work *Anleitung Zur Photographie für Anfänger*. The work is strictly what it claims to be on the title, viz: A Guidance into Photography for Beginners. It is well written and profusely illustrated with 101 engravings, and well deserves the popularity with which it has been received. We recommend it to any of our readers who can read German and wish to obtain an insight into our art. It is published by Wilhelm Knapp-Halle.

THE INTERNATIONAL ANNUAL FOR 1890, E. and H. T. Anthony & Co., New York.—This popular annual has been received. The editors have surpassed their previous efforts in collecting the series of articles interspersed with numerous illustrations. The work does credit to the publisher, and we recommend it to the notice of all of our readers, professional as well as amateur.

THE illustrated supplement to *Photography* for June 26, 1890, gives us the portraits of Prof. C. H. Bothamley, President; Mr. J. J. Briginshaw, Hon. Sec'y; Mr. F. Evans, Local Hon. Sec'y, and last but not least, Mr. Andrew Pringle, the retiring president. These portraits will form a valuable acquisition to our sanctum. Articles from the pen of both the retiring and present presidents have appeared on the pages of the AMERICAN JOURNAL, and are well known names to photographic students throughout the world.

RESTORING FADED PRINTS.—H. Landaurek, of Teschen, received a medal from the Photographic Society of Vienna for a process of reproducing and restoring albumen prints that have faded. His baths are:

No. 1.

Tungstate of soda 100 grams, or $3\frac{1}{2}$ oz.
Distilled water 5000 c. centim., or 175 oz.

No. 2.

Carbonate of lime (C.P.) 4 grams, or 62 grs.
Chloride of lime 1 gram, or $15\frac{1}{2}$ grs.
Chloride of gold and sodium 4 grams, or 62 grs.
Distilled water 400 c. centim., or 14 ozs.

Solution No. 2 is made in a yellow glass bottle, well stoppered, and allowed to stand for twenty-four hours before use. It is then filtered into another bottle of yellow glass, and, to preserve it, well corked. To use it, say for a sheet of albumenized paper, take 150 centimeters ($5\frac{1}{4}$ ounces) of No. 1 to from 4 to 8 centimeters (1 to 2 drachms) of No. 2. The prints, well washed, are placed one at a time in this bath. The strengthening must not be too rapid, ten minutes being sufficient in summer, and the bath must not contain an excess of chloride of gold. Properly used a beautiful clear purple color is obtained. To fix the prints take 150 centimeters ($5\frac{1}{4}$ ounces) of solution No. 1 to 15 centimeters (4 drachms) of hyposulphite of soda. The strengthened prints are well washed, placed in this bath one at a time, and soaked until the yellow color is entirely gone, which requires in some cases from three to five hours, when they are thoroughly washed.

PICTURES OF THE LIGHTNING.—William N. Jennings showed at the Franklin Institute recently several photographs of lightning taken during a violent storm. Mr. Jennings has been photographing lightning for more than eight years, and does not believe in such a thing as zig-zag lightning. His pictures appear to bear him out in his belief. He has photographed vertical, horizontal, and rotary flashes. In all the photographs the flashes showed, instead of a sharp zig-zag, an almost perfect wave line. The best photograph was one of a horizontal flash. This piece of work, he says, was a streak of luck, and it was the flash that preceded the most violent thunder clap of the storm. Running from the main flash of light were dark flashes, which Mr. Jennings does not pretend to understand. The cause of the dark lines was discussed by members of the institute, and several opinions were given.

SOME excellent advice is given by a recent writer on the production of artistic effects by judicious lighting in photography. He says that if photography seeks to follow in the footsteps of art it should free itself from the limitations of lighting in portraiture imposed by the narrow confines of skylights and reflecting screens. Were more study given to simplicity in lighting, the more successful would be the average portrait. "This is exactly the study of the painter—simplicity in his methods. Why does the amateur often beat the professional? Because he is backed with more artistic judgment, and freed from the conventions of the skylight, works with greater simplicity. What has made the success of some of the best of our photographers? What has led Sarony nowadays to discard backgrounds and bric-a-brac altogether? Nothing but this."

AUTOMATIC PHOTOGRAPHY.—Apropos of the new automatic photographic machines, a rather good story is going about, says the editor of the *British Journal of Photography*. An elderly lady of the sternest "British matron" type, who has heard of the wonderful new "process," happened to come across one of the already common "penny-in-the-slot" machines that supply photographs of celebrities at our railway stations. Placing her penny in the proper receptacle, and following the instructions given, she artistically posed herself, and after a due interval opened the drawer and drew out the photograph of a famous burlesque actress in full (?) dress. We have not yet heard the grand finale.

AN ITALIAN TONING BATH.—Print deeply, and immerse, *without washing*, into the following bath, which may be used at once, and will keep fairly well:

Hypo	240 grs.
Sulphocyanide of ammonium	50 "
Acetate of soda	15 "
Chloride of gold	2 "
Water	3 ozs.

Prints will first turn a sickly yellow, but will gradually assume a brown tone, then purple, and finally, warm black. Rinse and give five minutes in a five per cent. solution of alum, then wash well as usual. As may be seen, the above tones and fixes at the same time.

PROFESSIONAL ENTERPRISE IN ENGLAND.—A curious sight was witnessed one day last week in the Old Christ Church Road, Bournemouth. A photographer, residing at Lansdowne, advertised in a local paper that on certain days (of which the day in question was one) he would photograph all babies brought to his studio free of charge. The result of this decidedly novel offer must have astonished the photographer himself. From early in the morning until late in the day babies arrived in large numbers, and there was quite a procession of perambulators and bassinets. The photographer's studio rapidly filled, and the street outside was a perfect baby show. There were babies in arms, babies on wheels, fat babies, thin babies, and babies with heads as smooth as a billiard ball. The guardians of these precious mites, notwithstanding the long time they had to wait, appeared in perfect good humor, and waited their turn with quite philosophic patience. The scene was decidedly a grotesque one, and was at the same time as curious as it was amusing and instructive.—*Photography*.

THE *Photographic Instructor*, for the professional and amateur, by W. I. Lincoln Adams and Professor Charles Erhman, Scovill & Adams Co., N. Y., has been received. It is No. 26 of the Scovill Photographic Series. It has been found necessary to issue a second edition of this valuable work. In the twenty-four chapters composing the book the amateur can find all the information he is likely to want on any photographic topic. It is profusely illustrated, and printed on good paper with plain type. The name on the title page of our editorial brother of the *Times* is in itself a sufficient guarantee for the practical worth of the contents. Price, one dollar. Orders may be sent to 1030 Arch Street, Philadelphia.

SENSITIZED PLATES DEVELOPED IN WATER.—Dr. Backelandt gives the following formula for making sensitive plates which, after exposure in the camera, can be developed in water. These gelatino-bromide or gelatino-chloride of silver plates are prepared in the following manner: The back of the plate is coated with a mixture composed of:

Water	20 c.c.
Salicylic Acid	1 gramme.
Gum or Dextrine	10 grammes.
Alcohol	5 c.c.
Pyrogallic Acid	1 gramme.

The plate is allowed to dry at the ordinary temperature. To develop, steep it in water to which a few drops of ammonia have been added.—*Wilson's Photo. Magazine.*

MR. E. J. WALL announces the invention of a new printing out process by which prints can be obtained fully printed out by ordinary gaslight in some three-quarters of an hour's time. If all that he says turns out to be correct, and if the results are as satisfactorily as well as certainly produced as those by the methods of to-day, the new process will prove a boon, not only to amateurs who have only time to work at night, but to the professional whose output is at present limited by the amount of actinic light old Sol elects to favor him with. We await further particulars of the process with interest.

INTENSIFICATION.—Pin-holes in negatives intensified with bichloride of mercury and ammonia can be to a great extent avoided by using the following precautions: Filter your saturated mercury solution. Keep rocking the dish whilst allowing it to deposit on the negative. Wash well. Use distilled water with the ammonia. I believe this to be most important. If you add ammonia to ordinary water you will frequently notice the appearance of a large number of minute particles of some chemical substance, and I fancy these settle on the film and cause pin-holes. To render intensification a pleasure, avoiding markings, etc., acidify your mercury solution, say $\frac{1}{2}$ oz. of sulphuric acid to 20 ozs. of the mercury solution. This neutralizes any trace of hypo left in the film, and the result is a clean, bright negative, in place of a dirty, stained, uneven-printing one. If you do not require too much intensification, try the following method: After well washing (and before fixing, which you can always do in ordinary actinic light, although you will find a good many benighted photographers are afraid to try it), put the negative in the sunlight, and let it remain there for a few hours. Then fix as usual. You will find it has increased wonderfully in density. Don't forget to wash developer off thoroughly, say for two or three minutes under tap.—*B. Davidson, in Amateur (London) Photographer.*

CENSUS TAKER—Good morning, madam; I'm taking the census. Old Lady—The what? Census Taker—The c-e-n-s-u-s! Old Lady—For lan's sake! what with tramps takin' everythin' they kin lay their hans' on, young folks takin' fotygrafs of ye without so much as askin', an' impudent fellows comin' round as wants ter take yer senses, pretty soon there won't be nothin' left ter take, I'm thinking.

WE call the attention of our readers to the following notice from our valued exchange, the *Amsterdam Tijdschrift*. "De tocht van de leden is bepaald op Zondag 22 Juni. Een flinke stoomboot is gehuurd, ten einde een bezoek aan de Vecht te brengen. Nadere bijzonderheden zullen aan de leden bijtijds medegedeeld worden." The occasion was without doubt an enjoyable one, and we regret our inability to have been present with our friends of the Vereeniging "Helios."

CARVING THE FILM.—Every retoucher uses the pencil; few use the knife as much as they might do. A really fine bladed penknife, with the blade ground to a very fine point, and two or three dissecting needles—ordinary needles mounted in wooden handles and ground to a chisel point will do,—make an outfit that every retoucher ought to have handy. When you have begun to use them, you will be surprised to find how often they prove a real help.

WATERPROOF GLUE FOR WOODEN DISHES.—Soak $\frac{1}{2}$ pound of best glue in cold water until quite soft, melt in glue kettle. When quite dissolved, pour in one ounce of hot saturated solution of bichromate of potash, and stir well. It is now ready for use; apply with a brush. Put the article so treated to dry in full daylight for a day or two, and then apply strong alum solution. The vessel is now ready for use, but must be washed first.

FILLING HOLES IN NEGATIVES.—For insensitive spots, torn film, and similar places where the negative from any cause is not transparent and ought not to be, the following remedy will be found useful: Rub down a little fine black-lead (dry) until it is perfectly smooth, work up to a suitable consistency with a thin gum, and apply with a sable point. For re-touching large work this will be found a very useful adjunct to the pencil.

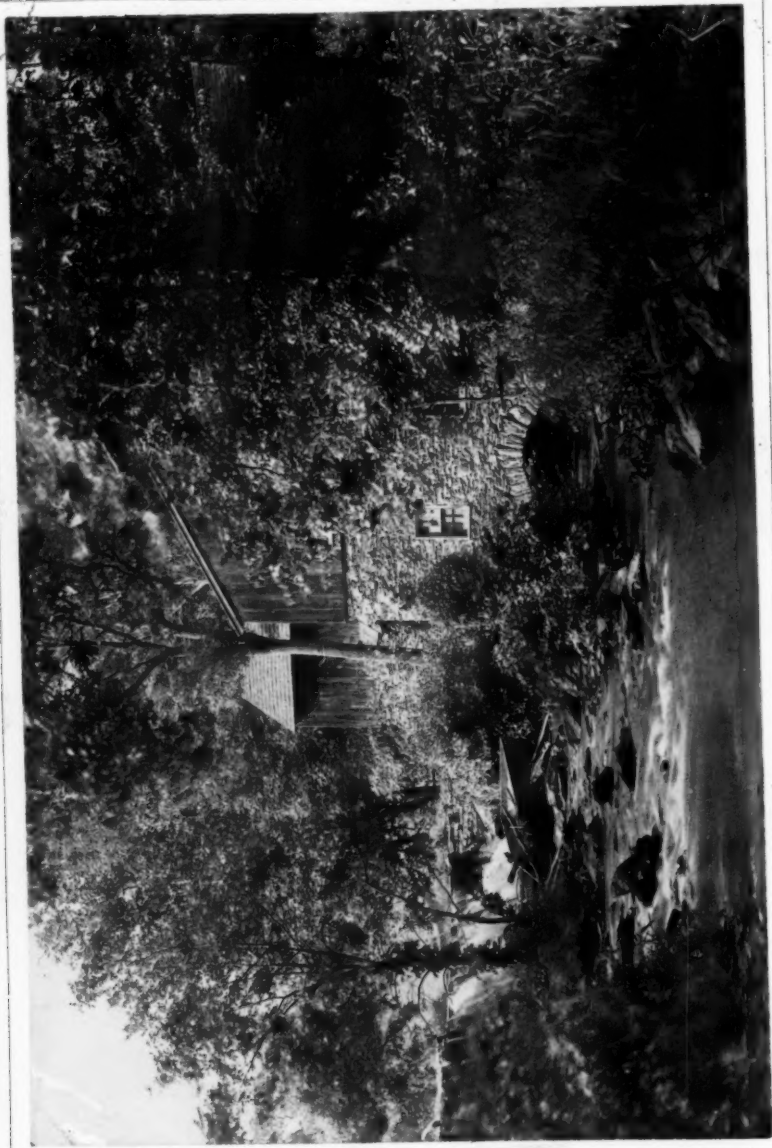
SPOTTING.—Let your India ink be of the best quality. Rub it up to the desired tone with neutral tint, in oil of spike, on a ground-glass slab. Use no water. Use a fine camel-hair "pencil," No. 2 or 3, dipping it in a bottle of the oil of spike, to dilute the color as required in working. You can then burnish the prints as much as you like without any fear that the spotting will "lift."

TO CLEAN THE BACKS OF PLATES.—Scrape off the largest spots and streaks of gelatine with a knife; then clean the rest of the plate with dry powdered pumice or cuttle, rubbed on with the hand. It removes the gelatine rapidly and polishes the glass at the same time.

MRS. LANGTRY'S silver bathtub is not such a novelty as many seem to think it. Every photographer has his silver bath.—*Chicago Times*.

PHOTOGRAPHER to young lady about to have her portrait taken: "Now, I'm not going to tell you to look pleasant; you couldn't look anything else!"

THE
JOHN CRERAR
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AN OLD MILL ON THE "CRUM," PENNSYLVANIA.

NEGATIVE BY J. F. SACHSE.

PRINTED BY T. H. MCCOLLIN & CO.